

REMARKS

In the Office Action, claims 1-23 were rejected. All of the claims are believed to be patentable for the reasons summarized below. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. § 103

Claims 1-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,770,161 issued to Charron (hereafter "Charron") US Patent 4,770,161. All of the claims are believed to be patentable for the reasons summarized below.

Charron does not teach use of a plurality of microvalves in parallel fluid communication with a gas burner.

Independent claims 1 and 10 recite a gas burner system with a micro-electro-mechanical valve having a plurality of microvalves in *parallel fluid communication* with a gas burner. Claim 17 similarly recites a gas valve comprising a plurality of microvalves in parallel fluid communication with a gas burner. Claim 19 similarly recites a method of controlling gas flow to a burner by controlling an opening of at least some of a plurality of independently controllable microvalves in parallel fluid communication.

As noted above, the plurality of microvalves are arranged in an array and are in parallel fluid communication with the gas burner to provide improved electronic control of gas burner. See, e.g., Figures 1, 3 and paragraph 009 of the Detailed Description. Accordingly, different numbers of microvalves may be opened or closed to provide variable gas flow to a *single gas burner*. See, e.g., paragraph 010 of the Detailed Description.

The cited paragraph reads:

For example, in an array comprising ten microvalves, one of the microvalves may be opened to provide a lowest setting for gas flow to the burner. Progressively larger numbers of microvalves may be opened to provide increasingly higher gas flows. In an aspect of the invention, the number of microvalves selected for the MEMS valve may be based on the total gas flow required to fire the burners at a desired burner rating, and the gas flow capability of each valve.

Moreover, the above mentioned arrangement is also employed for a multiburner appliance comprising a MEMS valve having portions of an array of microvalves coupled to respective burners. Again, each portion may include an appropriate number of microvalves to provide a gas flow required to fire the respective burner coupled to each portion. See, e.g., Figure 2 and paragraph 014 of the Detailed Description.

Applicants respectfully submit that Charron does not teach providing an array of a plurality of independently controllable microvalves in parallel fluid communication with a single gas burner. Further, Charron does not teach an arrangement with portions of an array of microvalves coupled to respective burners for a multiburner appliance.

Charron does not suggest control of gas flow to a gas burner via a plurality of microvalves in parallel fluid communication with the gas burner.

As noted above, Charron does not teach the use of plurality of microvalves in parallel fluid communication with the gas burner. Moreover, Charron does not even suggest use of the plurality of microvalves to control gas flow to the gas burner.

Applicants submit that the invention uses plurality of microvalves in parallel fluid communication to control the gas flow through a microvalve controller as recited in the specification. See, e.g., Paragraph 010 of the Detailed Description.

The microvalves may be operated in a continuously variable, or analog fashion to provide a variable range of microvalve openings, and consequently, variable gas flow from the valve, depending on a degree of opening of the microvalve. Further, as mentioned above, different numbers of microvalves in the MEMS valve may be opened or closed to provide variable gas flow. The prior art fails to teach such an arrangement.

Challenge to the Examiner for use of Official Notice.

Without citing any reference other than Charron, the Examiner has repeatedly made use of Official Notice to reject claims to features that are not shown in the art. In accordance with MPEP § 2144.03 the Applicants seasonably traverse the Examiner's assertion of Official Notice. Applicants submit that no documentary evidence from any reference has been provided that substantiates the Official Notice regarding the arrangement of plurality of valves, burners and other features recited by the Examiner. Further, there is no evidentiary support that the features discussed by the Examiner are within the general skill of one of ordinary skill in the art or of "common knowledge."

Therefore, Applicants submit that independent claims 1, 10, 17 and 19 are allowable and respectfully request the Examiner to remove the rejection of the claims.

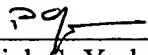
With regard to dependent claims 2-9, 12-16, 18 and 20-23, these claims depend directly or indirectly from allowable claims 1, 10, 17 and 19, and are therefore considered to be allowable at least by virtue of their dependency from an allowable base claim.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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